



Release 2.1D John F. Collins, Biocomputing Research Unit.  
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Mpsrch\_nm n.a. - n.a. database search, using Smith-Waterman algorithm  
on: Thu Aug 21 10:01:25 1997; Maspar time 180.55 Seconds  
832.142 Million cell updates/sec

Tabular output not generated.

Title: >US-08-469-637A-1  
Description: (1-1527) from US08469637A.seq  
Perfect Score: 1527  
N.A. Sequence: 1 CGCCGAGCCGCGCCCTCCAA.....TTCACCTGGAATAAAAAA 1527  
Comp: GCGGCTCGCGCGCGAGGTT.....AAGTGTACCTTTTITTTT

Scoring table: TABLE default  
Gap 6

Nmatch STD : Dbase 0; Query 0  
134151.segs, 49196315 bases x 2

Searched: Minimum Match 0%  
Post-processing: Listing first 45 summaries

Database: n-geneseq27  
1:part1 2:part2 3:part3 4:part4 5:part5 6:part6 7:part7  
8:part8 9:part9 10:part10 11:part11 12:part12 13:part13  
14:part14 15:part15 16:part16 17:part17 18:part18  
19:part19 20:part20 21:part21 22:part22 23:part23  
24:part24 25:part25 26:part26 27:part27

Statistics: Mean 9.385; Variance 5.205; scale 1.803

pred. NO. is the number of results predicted by chance to have a  
score greater than or equal to the score of the result being printed,  
and is derived by analysis of the total score distribution.

#### SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description	Pred. No.
1	1204	78.8	1206 27	T36685	Osteoclastogenesis in	0.00e+00
2	1200	78.6	1206 27	T33165	Mutated OCIF, OCIF-C2	0.00e+00
3	1200	78.6	1206 27	T33164	Mutated OCIF, OCIF-C2	0.00e+00
4	1200	78.6	1206 27	T33162	Mutated OCIF, OCIF-C1	0.00e+00
5	1200	78.6	1206 27	T33161	Mutated OCIF, OCIF-C2	0.00e+00
6	1198	78.5	1206 27	T33163	Mutated OCIF, OCIF-C1	0.00e+00
7	1196	78.3	1200 27	T33172	Mutated OCIF, OCIF-CB	0.00e+00
8	1173	76.8	1182 27	T33178	Mutated OCIF, OCIF-CB	0.00e+00
9	1052	68.9	1056 27	T33177	Mutated OCIF, OCIF-DC	0.00e+00
10	1017	66.6	966 27	T33179	Mutated OCIF, OCIF-DC	0.00e+00
11	951	62.3	1080 27	T33167	Mutated OCIF, OCIF-DC	0.00e+00
12	890	58.3	1080 27	T33171	Mutated OCIF, OCIF-DC	0.00e+00
13	816	53.4	984 27	T33174	Mutated OCIF, OCIF-DC	0.00e+00
14	814	53.3	819 27	T33174	Mutated OCIF, OCIF-DC	0.00e+00
15	765	50.1	1080 27	T33168	Mutated OCIF, OCIF-DC	0.00e+00
16	663	43.4	10190 27	T33183	Fragment of human OCI	0.00e+00

17	649	42.5	1080 27	T33169	Mutated OCIF, OCIF-DC	0.00e+00
18	598	39.2	981 27	T33170	Mutated OCIF, OCIF-DC	0.00e+00
19	589	38.6	594 27	T33175	Mutated OCIF, OCIF-DC	0.00e+00
20	558	36.5	564 27	T33180	Mutated OCIF, OCIF-DC	0.00e+00
21	428	28.0	432 27	T33176	Mutated OCIF, OCIF-DC	0.00e+00
22	402	26.3	428 27	T33169	Osteoclastogenesis in	9.46e-278
23	400	26.2	428 27	T33168	Osteoclastogenesis in	3.22e-276
24	318	20.8	321 27	T33177	Mutated OCIF, OCIF-CP	1.35e-213
25	244	16.0	255 27	T33181	Mutated OCIF, OCIF-CP	1.77e-157
26	99	6.5	1047 2	Q10572	Human Natriuretic pep	3.74e-50
27	80	5.2	1047 2	Q10572	Human Natriuretic pep	9.70e-37
28	75	4.9	1317 27	T33182	Fragment of human OCI	2.88e-33
29	45	2.9	91 9	Q51746	Oligonucleotide probe	2.87e-13
30	42	2.8	204 1	N81164	Base substituted E.co	2.17e-11
31	39	2.6	91 9	Q51746	Base substituted E.co	1.52e-09
32	36	2.4	114 12	Q70465	Generic DNA sequence	9.72e-08
33	36	2.4	114 12	Q70470	Generic DNA sequence	9.72e-08
34	36	2.4	114 12	Q70469	Generic DNA sequence	9.72e-08
35	37	2.4	204 1	N81164	Base substituted E.co	2.46e-08
36	35	2.3	114 12	Q70467	Generic DNA sequence	3.80e-07
37	33	2.2	114 12	Q70468	Generic DNA sequence	5.59e-06
38	33	2.2	114 12	Q70466	Generic DNA sequence	5.59e-06
39	34	2.2	114 12	Q70467	Generic DNA sequence	1.47e-06
40	33	2.2	114 12	Q70468	Generic DNA sequence	5.59e-06
41	32	2.1	114 12	Q70473	Generic DNA sequence	2.10e-05
42	32	2.1	114 12	Q70465	Generic DNA sequence	2.10e-05
43	32	2.1	114 12	Q70469	Generic DNA sequence	2.10e-05
44	31	2.0	114 12	Q70472	Generic DNA sequence	7.78e-05
45	30	2.0	114 12	Q70466	Generic DNA sequence	2.84e-04

#### ALIGNMENTS

RESULT 1	ID	T36685	standard; DNA; 1206 BP.
AC	T36685		
AT	22-APR-1997	(first entry)	
DE	Osteoclastogenesis inhibitory factor coding sequence.		
KM	Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption;		
KW	osteoporosis; ss.		
OS	Homo sapiens.		
FN	Key	Location/Qualifiers	
FT	sig.peptide	1..63	
FT	mat.peptide	64..1203	
FT	/tag- b		
FT	/label- Claim 6		
PN	W0626217-A1.		
PD	29-AUG-1996.		
PF	20-FEB-1996; J00374.		
PR	20-FEB-1995; JP-054977.		
PR	21-JUL-1995; JP-207508.		
PA	(SNOW) SNOW BRAND MILK PROD CO LTD.		
PI	Goto M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T;		
PI	Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H;		
DR	WPI: 96-402320/40.		
DR	P-PDB: R99924-25.		
PT	DNA encoding osteoclastogenesis inhibitory factor protein - useful		
PT	for bone resorption control, esp. treatment of osteoporosis		
PS	Claim 8: Page 66-67; 183pp; Japanese.		
CC	This sequence encodes the full length osteoclastogenesis inhibitory		
CC	factor (OCIF) of the invention. The OCIF has a molecular weight by		
CC	SDS-PAGE of 60 kD under reducing conditions and 120 kD under non-		
CC	reducing conditions. The protein is adsorbed onto cation-exchangers		
CC	or heparin and its activity is lowered after 10 mins at 70 deg.C or		
CC	30 mins at 56 deg.C, and is lost after 10 mins at 90 deg.C. OCIF is		
CC	useful in the control of bone resorption and therefore in the		
CC	treatment and prevention of disorders of bone resorption, e.g.		
CC	osteoporosis.		
CC	Sequence 1206 BP; 388 A; 284 C; 269 G; 265 T;		
CC	Query Match	78.8%; Score 1204; DB 27; Length 1206;	
CC	Best Local Similarity	99.9%; Pred. No. 0.00e+00;	

	Matches	1205	Conservative	0	Mismatches	1	Indels	0	Gaps	0
D	b	1	atgaacaactgctgcgtgtgcgcgtcgtgtcttcgtgacatctccattaaagtggaccac	60						
O	y	46	ATGAACAAGTTGCTGCTGCTGCGCGCTGCTGTTTGTGGACATCTTCATTAAAGTGGACACC	105						
D	b	61	caggaaacgcttcctcccaaaagtacccatcatatgacgaagaanaaccttcacgtgttg	120						
O	y	106	CAGGAAGGTTTCTCTCCAAAGTACTCTTATATGACGAAGAAACCTCTCATACAGCTTTG	165						
D	b	121	tgtagcaaatctctctctgtgtactaccttaaacacacacgtgtacagcaaaagtggaaac	180						
O	y	166	TGTACACAATGTCCTCTCTGTACTACTTAAACAAACGTATACGAAGAAGTGGAAACCC	225						
D	b	181	gtgagcgcccttcgcccgtgacacatacacaagaagctggacacacagtgaaagtgt	240						
O	y	226	GTGTGCGCCCTTGCTCCTGACCACTTACTACACAGACAGCTTGGCACACCAAGTACGAATGT	285						
D	b	241	ctatactgcaagcccccgtgtgcaaaagctgcaatgacgttcaagcagagagtcaatcgacc	300						
O	y	286	CTTACTATGACAGCCCCGATGTGCAAGAGAGGTGAGTACGTCAACGACGAGAGTGCATCGCACCC	345						
D	b	301	cacaaacgctgtgtgcgaatgcgaagaagggcgctcaaccttgatagataagtgctctgtgaaa	360						
O	y	346	CACAAACCGCGGTGCGAATGCMAAGGAAGGGGCGTCACTTGAGATAGAGTTCTGCTTGA	405						
D	b	361	catagagagctccctccctctgatttgagagtgtgtgaagctggaaccccaagggcgaataca	420						
O	y	406	CATAGAGACTGCTCCTCCTGATTGTGGAGTGGTGCACACTGGAACCCGACGCGAAATACA	465						
D	b	421	gtttgcaaaaagtgtcccaatgagttctctcccaatagacgtcatcctaagcacccctgt	480						
O	y	466	GTTTGCAAAAATATGCCAGATGGGTTCTCTCAATATAGACGTATATTAAGCACCCCTGT	525						
D	b	481	agaaacacacacaaatgtgcagtgctcttggtctccctgcttaactcgaagaagaaatgcaaca	540						
O	y	526	AGAAACACACAAATTTGACGTGTTTGGTCTCTCTGCTACTCGAAGGAAGAAATGCAACA	585						
D	b	541	cacgaacacatatgttcgcgaagaagtgatcaactcaaaaatgttgaaatagatgttacc	600						
O	y	586	CACGACAAACATATTTCCGGAACAGTGAATCAACTGAAAATGTGAAATGATGTATACC	645						
D	b	601	ctgtgtgaagagagcatctctcaagtttctgtctcccaaaagtttaagccttaactggtct	660						
O	y	646	CTGTGTGAGAGGCGATCTTTCAGGTTTGTCTTCTCTCAAAAGTTTAAAGCTTAAGCTTGCTT	705						
D	b	661	agtgctctgtgtagaacaatttgctctgacccaagaatlaaagcagaagtgtagaagagata	720						
O	y	706	AGTGTCTGTGTGATGACAAATTTGCTCGCACCAAAATTAACGACGAGATGTGAGAGGATA	765						
D	b	721	aaagggcaaacacagctcaacaaagaacaactttccaagctgctggaagttaatggaaacatcaa	780						
O	y	766	AAAGGCAACACACACTCTACACAAAGAACAACTTTCCAGTGTGAGAGTTATGGAACATCAA	825						
D	b	781	aacaagaacacagaataatagtcacaagaagatcaaccaagatatgacccctgtgaaaaacagc	840						
O	y	826	AACAAGAACCAAGTATATAGTCAABAABAATCATCCAAATATATGACCTCTGTGAAAAACGC	885						
D	b	841	gtgcagcggcacalttgacatgtaacctcaaccttcgaagaccttgtagctgtatggaa	900						
O	y	886	GTCGACAGGGCCATTGTGACATGCTTAACCTCACCTTCGACGACGCTTCTACTCTGATGAA	945						
D	b	901	agcttaccgggaaagaagaagtgtggggcgaagaagacttgaaaaaaacaataaaggcatgtaaa	960						
O	y	946	AGCTTACCGGGGAAAAAGTGGAGGACGAAACNCTTAAAAAATAAATAAGGCAATGCAAA	1005						
D	b	961	ccccagtgaccagatccctgaaagctcctcaagtttgggggaaataaanaaattggcaccagagc	1020						
O	y	1006	CCCAAGTACACGATCTCTGAAGACTCTCAAGTTTGTGGCGGATTAATAAAATGGCGACCAAGAC	1065						
D	b	1021	accttgaagggccttaatgacgcacgcaataaagcactcaaaagcgtacacacttcccaaaact	1080						
O	y	1066	ACCTTTGAAGGGCCTTAATGACAGCACTTAAGACACTCAAAAGAGTACCTCCACTTCCCAAACT	1125						

Db	1001	gtcactcgaatcctcaagaagaccatacaggttcctcttcacagcttcacaaatgtacaaattg	1140
Oy	1126	GTCACTCAGAGCTCAAAAAGAACCATAGGTTCCCTTCACAGCTTCACAAATGTACAAATTTG	1185
Db	1141	tatcagaagttatttttgaatgatagtagracaggttcacatgaatgaataaagaagctgc	1200
Oy	1186	TATCAGAGCTTATTTTGTGAAATGATAGTAGTACCAAGGTCACATCATGTAAATTAAGCTGC	1245
Db	1201	ttataa	1206
Oy	1246	TTATPA	1251
RESULT 2			
ID	T33165	standard; DNA; 1206 BP.	
AC	T33165.		
DT	22-APR-1997	(first entry)	
DE	Mutated OCIF, OCIF-C23S, coding sequence.		
KW	Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption; osteoporosis; ss.		
OS	Synthetic.		
Key		Location/Qualifiers	
FT	sig_peptide	1..63	
FT	/*tag- a		
FT	mat_peptide	64..1203	
FT	/*tag- b		
FT	/product- OCIF-C23S		
PN	W09626217-A1.		
PD	29-AUG-1996.		
PF	20-FEB-1996; JP-054374.		
PR	20-FEB-1995; JP-054977.		
PR	21-JUL-1995; JP-207508.		
PA	(SNOW) SNOW BRAND MILK PROD CO LTD.		
PI	Goto M, Iwagishi K, Kobayashi F, Mochizuki S, Morinaga T;		
PI	Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yesuda H;		
DR	WPI: 96-402330/40.		
DR	P-PsDB: R39935.		
PT	DNA encoding osteoclastogenesis inhibitory factor protein - useful		
PT	for bone resorption control, esp. treatment of osteoporosis		
PS	Claim 39; Page 136-137; 183pp; Japanese.		
CC	This sequence encodes a mutated version of the full length		
CC	osteoclastogenesis inhibitory factor (OCIF) of the invention. This		
CC	sequence encodes OCIF-C23S in which the 23rd Cys residue in the mature		
CC	OCIF protein is substituted by Ser. The OCIF of the invention has a		
CC	molecular weight by SDS-PAGE of 60 kD under reducing conditions and		
CC	120 kD under non-reducing conditions. The protein is adsorbed onto		
CC	cation-exchangers or heparin and its activity is lowered after 10 mins		
CC	at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90		
CC	deg.C. OCIF is useful in the control of bone resorption and therefore		
CC	in the treatment and prevention of disorders of bone resorption, e.g.		
CC	osteoporosis.		
CC	Sequence 1206 BP; 389 A; 285 C; 268 G; 264 T;		
Query Match 78.6%; Score 1200; DB 27; Length 1206;			
Best Local Similarity 99.8%; Pred. No. 0.00e+00; Mismatches 3; Indels 0; Gaps 0;			
Matches 1203; Conservative 0;			
Db	1	atgacaactcgtcgtcgtcgcgcgcgtcgttcttcgtgacatctccatgaagtgcaccac	60
Oy	46	ATGAACAAGTGTGCTGTGGCGGCTGTGTTGTGACATCTCATTAAGTGCACACC	105
Db	61	caggaacgcttcctccaagaatcattcatatagaagaagaaccttcacagctgttg	120
Oy	106	CAGGAACGTTCTCTCCAAAGTACCTTCATTATGACGAAGAAACCTTCATCAGCTTTG	165
Db	121	tgtacaaatctctcctcgtgtacacctaaagaacacgtgaagaagtgaagacc	180
Oy	166	TGTACAAATCTCTCTCTGTGTACTTACTTAAACAACTGTACAGCAAGTGCAGAACCC	225
Db	181	gtgtgcgcccttcgccttgacacctactaacaagacagctgcacacagtgacagttc	240
Oy	226	GTGTGCGCCCTTCCCTGTGACCATTTACTACAAACAGCTGGCACACCAATGACGATGT	285

Db 241 ctatctcgcagcccccgtgtgcaaggagctgcaagtaagcagagtgatgcgacc 300  
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 Db 301 cacaacccgctgtgcaatgcaaggaaggcgctaccttgaatagatgctctgtaa 360  
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 QY 346 CACAACCGCCTGTGCGAATGCAAGAGGCGCTACCTTAGATAGATGCTCTGTA 405  
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 Db 361 catagagctgcccctcctgtaatttgagatggtgcaagctggaaccccgagcgaaatata 420  
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 QY 406 CATAGAGCTGCCCTCCTCGATTGAGTGTGCAAGCTGGAACCCGAGCGCAATATACA 465  
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 Db 421 gtttgcacaaagatgctcagatgtggtttcttcaatgagcgctcatctaaagacacctgt 480  
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 QY 466 GTTTCAAAAGATGTCAGATGGGTTCTTCTCAAAATGAGAGTCACTTAAGACCCCTGT 525  
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 Db 481 agaaaacacacaattgcaatgctcttgcctcctgtaacctgaagaaaggaatgcaaca 540  
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 QY 526 AGAAACACACAAATTCAGATGCTCTTGGCTCTCTGCTACTCAGAAAGAAATGCACACA 585  
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 Db 541 cacyacacacataltgctccggaacagtgaaatcaactcaaaaatgtggaatagatgtacc 600  
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 QY 586 CACGACACATATGTTCCGGAACAGTGAATCAACTCAAAATGTGGAAATAGATGTTACC 645  
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 Db 601 ctgtgtgaggaagcattctctcaggtttgctgtctcccaaaagtttaagcctaactgctt 660  
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 QY 646 CTGTGTGAGGAGCATCTTCAGATGTTGCTGTTCTTAACAAAGTTTACGCCCTTACCTG 705  
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 Db 781 aaaaagacacaaatagatcaagaaagatcatatcaagaatttgacctgtgaaacaaagc 840  
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 QY 826 AACAAACACCAATATATAGTCAAGAAAGATCATCCAAAGATTTGACCTCTGTGAACACGC 885  
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 QY 1066 ACCTTGAAGGCGCTTAATGCGACGCACTTAAGCAGCTCAAGAGCGTAAACCTTTCCCAAAACT 1125  
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 QY 1126 GTCACTCAGAGTCAAGAAAGAACCATCAGGTCTCTTCAAGCTTCAACAATGTAACAAATTG 1185  
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 Db 1141 tatcagaagttaatttttaagaataatgatacgaagcttcaatcagctaaataaagcagc 1200  
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 QY 1186 TATCAGAAGTATTTTATAGAAATGATAGTAAACAGGTCCAAATCAGTAAATAAATAGCTGC 1245  
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 Db 1201 titataa 1206  
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 QY 1246 TTATATA 1251  
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 RESULT 3  
 ID T33164 standard: DNA; 1206 BP.  
 AC T33164;

DT 22-APR-1997 (first entry)  
 DE Mutated OCIF, OCIF-C22S, coding sequence.  
 KW Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption;  
 KW osteoporosis; ss.  
 OS Synthetic.  
 FH Key  
 FT sig.peptide 1..63 Location/Qualifiers  
 FT /\*tag\_a 64..1203  
 FT mat.peptide  
 FT /\*tag\_b  
 FT /product= OCIF-C22S  
 PN WO9626217-A1.  
 PD 29-AUG-1996.  
 PF 20-FEB-1996; J00374.  
 PR 20-FEB-1996; JP-054977.  
 PR 21-JUL-1995; JP-207508.  
 PA (SNOW) SNOW BRAND MILK PROD CO LTD.  
 PI Goto M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T;  
 PI Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H;  
 DR MPI:96-402320/40.  
 DR P-SDS: R99934.  
 PT DNA encoding osteoclastogenesis inhibitory factor protein - useful  
 PT for bone resorption control, esp. treatment of osteoporosis  
 PS Claim 36; Page 135-136; 183pp; Japanese.  
 CC This sequence encodes a mutated version of the full length  
 CC osteoclastogenesis inhibitory factor (OCIF) of the full length.  
 CC sequence encodes OCIF-C22S. In which the 22nd Cys residue in the mature  
 CC OCIF protein is substituted by Ser. The OCIF of the invention has a  
 CC molecular weight by SDS-PAGE of 60 kD under reducing conditions and  
 CC 120 kD under non-reducing conditions. The protein is adsorbed onto  
 CC cation-exchangers or heparin and its activity is lowered after 10 mins  
 CC at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90  
 CC deg.C. OCIF is useful in the control of bone resorption and therefore  
 CC in the treatment and prevention of disorders of bone resorption, e.g.  
 CC osteoporosis.  
 SQ Sequence 1206 BP; 389 A; 285 C; 268 G; 264 T;

Query Match 78.6%; Score 1200; DB 27; Length 1206;  
 Best Local Similarity 99.8%; Pred. No. 0.00e+00;  
 Matches 1203; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

Db 1 atgaacaaattgctgtgcgcgcgcgcgtgttctggaacatccatgaaggaacc 60  
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 QY 46 ATGAACAAATTGCTGTGCGCGCGCGCTCGTGTTCGAGATTCATTAAGTGAGACACC 105  
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 Db 121 tgtgacaaatgtccctctctgttaccttaactaaacaacactgtacagcaagtgtgaagacc 180  
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 QY 166 TGTGACAAATGTCTCTCTGTAACCTTAACCTTAACCAACACTGTGACAGCAAGTGAGAAC 225  
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 Db 181 gttgtgcccccttgcctcctacactactacacagacagctgtgcacacagtgtagaagtg 240  
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 Db 241 ctatactcagcccgctgtgcaaggagctgcagtaagctcaagcaggagtgtaacgcacc 300  
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 QY 346 CACAACCGGCTGTGCGAAGCAAGGAGGCGCTACCTTGAGATGAGTTCGCTTGAAA 405  
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 Db 361 catagagctgcccctcctcctgatttgagtggtgcaagctggaaccccgaggaataata 420  
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 QY 406 CATAGAGCTGCCCTCCTCGATTGAGTGTGCAAGCTGGAACCCGAGCGCAATATACA 465  
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 Db 421 gtttgcacaaagatgctcagatgtggtttcttcaatgagcgctcatctaaagacacctgt 480  
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 QY 466 GTTTCAAAAGATGTCAGATGGGTTCTTCTCAAAATGAGAGCTCACTTAAGACCCCTGT 525  
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ID	RESULT	4
DB	481	agaaaacacacaaattgcaatgctgcttggcttccctgcttaacttcagaagaagaaatgcaca 540
2Y	526	AGAAAACACACAAAATTCGAATGCTCTTGGCTCTCTCTAATCAGAAAGAAATGCACA 585
DB	541	cacgacacacatgtctccggaaacagtgaaatcaactcaacccaataatgtagatgtacc 600
2Y	586	CACGACACACATATTTCTCCGAAACAGTGAATCAACTCAAAAATGTGGAATTAATTTTACC 645
DB	601	ctgtgtgaggagagcatctcttcacaggttctgctgttctctacaagaatttcagcttaactgctt 660
2Y	646	CTGTGTGAGGAGGCATTCTTCAGGTTTGCTGTTCCTACAAAGTTTACGGCTAATCTGGCTT 705
DB	661	agttctctgtgtagaacaatttgcctgtgcacccaagaatgaacgcagagagtgtagaagata 720
2Y	706	AGTTCTCTGTGTAGACAAATTTGCTCTGGCACCAAAAGTAAAGCAGAGTGTTATAGAGGATA 765
DB	721	aaagggaaacacacagctctacaagaacagagcttccacagctgtctgaagtatgaaacataa 780
2Y	766	AAAGGGCAACACAGCTACAGAACAGACTTTTCAGCTCTCTGAAGTTATGAAACATCA 825
DB	781	aacaaagaccacaaatalatagtcacaagaagatcatccaagatattgacacctgtgtaaaacagc 840
2Y	826	AACAAGAACCCAGATATATGTCAGAGAGATGATCAAGATATTGACCTCTGTGTAACACAGC 885
DB	841	gtgcagcgcgcacatctggaatctgtaacctcaacctcagcagcttcgtatgctgtatgtaa 900
2Y	886	GTCGACGCGGCACATTTGGACATGCTAATCCTCACCTTGACAGCTTCGTAGCTTGATGGAA 945
DB	901	agcttaccgggaagaagaagtgaggagcagaagaacattgaaaaaaacaataaggcaagcaaa 960
2Y	946	AGCTTTACCGGAAAGAAAGTGGGGGCGAAGAAATTTGAAAACAAATTAAGCATGACAAA 1005
DB	961	cccagtgaccagatcctctgaaccctgctcagtttctgtgcgaataaaatgtgcagccaagac 1020
2Y	1006	CCGAGTGACGAGATCCCTGGAAGCTGCTCAGTTTGTGGCGAATTAATAATGGCGACCAAGAC 1065
DB	1021	accttgaaggagcctaactgcaagcagcaataaagcactcaagaacgtaccacttcccaaaact 1080
2Y	1066	ACCTTGAGAGGGCCCTTAATGCGACGCACTAAACACTCAAAAGACGTACACTTTCCCAAAACT 1125
DB	1081	gtcactaagagctcaagaagaacatcagttccttcacagcttccaaatgtaacatgtg 1140
2Y	1126	GTCACCTAGAGCTTAAAGGAAGACCATCAGTTCCTTCAACAGCTTCAATGTACAAATTG 1185
DB	1141	tatcagaagatatttttagaagatgatagtgaaacaggtccaatcagtaaaataaagctgc 1200
2Y	1186	TATCAGAGATATTATTAGAAATGATATGATATGATACAGAGTCCATCTCACTAATAAATTAAGTGC 1245
DB	1201	ttataa 1206
DB	1246	TTATTA 1251
DB	T33162	standard; DNA; 1206 BP.
DB	T33162	
DB	22-APR-1997	(first entry)
DB	Mutated OCIF, OCIF-C20S	coding sequence.
DB	Osteoclastogenesis inhibitor factor; OCIF; heparin; bone resorption;	
DB	osteoporosis; ss.	
DB	Synthetic.	
DB	Key	
DB	sig_peptide	Location/Qualifiers
DB	mat_peptide	1..63
DB	/*tag- a	
DB	/*tag- b	
DB	/product- OCIF-C20S	64..1203
DB	MO9626217-A1.	
DB	29-AUG-1996.	
DB	20-FEB-1996.	
DB	20-FEB-1995; JP-054977.	
DB	21-JUL-1995; JP-207508.	
DB	(SNOW ) SNOW BRAND MILK PROD CO LTD.	

PI Goto M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T;  
PI Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H;  
DR WPI: 96-40320/40.  
DR P-PSDB: R99932.  
PT DNA encoding osteoclastogenesis inhibitory factor protein - useful  
for bone resorption control, esp. treatment of osteoporosis  
PS Claim 30. Page 133-134; 183pp. Japanese.  
CC This sequence encodes a mutated version of the full length  
osteoclastogenesis inhibitory factor (OCIF) of the invention. This  
sequence encodes OCIF-C20S in which the 20th Cys residue in the mature  
OCIF protein is substituted by Ser. The OCIF of the invention has a  
molecular weight by SDS-PAGE of 60 kD under reducing conditions and  
110 kD under non-reducing conditions. The protein is adsorbed onto  
cation-exchangers or heparin and its activity is lowered after 10 mins  
at 70 deg C or 30 mins at 56 deg C, and is lost after 10 mins at 90  
deg C. OCIF is useful in the control of bone resorption and therefore  
in the treatment and prevention of disorders of bone resorption, e.g.  
osteoporosis.  
CC Sequence 1206 BP; 389 A; 283 C; 270 G; 264 T;

Query Match	78.6%	Score 1200;	DB 27;	Length 1206;
Best Local Similarity	99.8%;	Pred. No. 0.00e+00;		
Matches 1203;	Conservative	0;	Mismatches 3;	Indels 0;
			Gaps 0;	

D	b	1	atgaacaactgctgtgtgcccgcgcgtgtgttcttcggacatctccatgaatgagaccag	60
Q	y	46	ATGAACAAGTGTCTGTGCGCGCGCTGCGTGTTCGGACATCTCCATTAAATGGAGACC	105
D	b	61	caggaaacgtttccctccaaagctaccctcaatgaacggaacacctccatcagctgttg	120
Q	y	106	CAGGAACGTTTCTCTCCAAAGTACTTCAATTATGACGAAGAACTCTCATCAGCTGTG	165
D	b	121	tgtgacaatgtctctcctctgtgtaacctacaacacacactgttaacgacaagtgaagac	180
Q	y	166	TGTGACAATGTCTCTCTGTGTAACCTAAACAACACTGTACAGCAAAATGGAGACC	225
D	b	181	gtgtgcgcccttgcctccctcaccatacacaacagctgtgcacacccagtgcagtgct	240
Q	y	226	GTTGTGCGCCCTTGCCCTTACCACTACACAGACACTGGCACACCAAGTAGAGTGT	285
D	b	241	ctatctctgcagcccccgtgtgcagaagctgcagtaactgcagaagagttgaatcgacc	300
Q	y	286	CTTACTGCAGCCCCGTGTGCAAGAGCTGCAGTACGTCAAGCAAGAGTGCATTCGACC	345
D	b	301	cacaaccgcgtgtgtgcgaatgcagaagagcgctacaccttgatagaagttctgcgtgaa	360
Q	y	346	CACAACCGGTGTGGCAATGCAGAGAGGGCGCTACCTTGAGATATGATTTGCTTAAA	405
D	b	361	cataggagctgcctccctcctggaatttgagtggtgcaagctgtgaaccccaagcgaataca	420
Q	y	406	CATAGAGCGCCCTCTCGATTGTGAGAGGTGCACAGCTGGACCCCGACGCAATACA	465
D	b	421	gtttgcgaagaatgtccaaatgtgttcttctcaaatggaagtcattctcaagcaccctgt	480
Q	y	466	GTTTGGAAAAAGATGTCAAATGGGTTCTTCTCAATGTGAGAGCTATCTAAAGCAACCTGT	525
D	b	481	agaagaacacacaatatgcagtgagtgctttgtgtccctgcctcaactcgaagaagatgcaca	540
Q	y	526	AGAAAAACACCAAAATTGCGAGTGTTCTTTTGCTCTCTCGTCTAACTCAGAAAAGAAATGCACA	585
D	b	541	cacgacaacatatgttccgcggaacacagtgtaatacactccaacaaatgtgtaataagttacc	600
Q	y	586	CACGACAACATATGTTCCGGAAACAGTGAATCAACTCAAAAATGTGGAAATGATGTACC	645
D	b	601	ctgagtgaaggagcatctcttcacaggttgctgtctcctacaagtttaegcctaactgctc	660
Q	y	646	CTGTGTGAGAGGCATTCTTCAGGTTTGCTTCTCTACAAAGTTTACCCCTACATGTCCT	705
D	b	661	agtgcttcttgtaacacatttgcctctgcgaacaaagtaaacgcgaagagtgtagaagagata	720
Q	y	706	AGTGCTCTGTGTACCAATTTGCTCTGGACCAAAAGTAAACGCAAGAGTGTAAGAGGATA	765
D	b	721	aaacggcacacacagctccacaagaacagaacttccacgctgcgtcgaagtatggaacatcaa	780

|||||  
QY 766 AAACGGCAACAGCTCCACAGACAGACTTCCAGCTGCTTAATTTGGAAACATCA 825  
Db 781 aacaaagccaagatatagtcagaagaatcatccaagatatatgacctgtgtaaacagc 840  
OY 826 AACAAAGACCAAGATATAGTCAGAAAGATCATCCAAAGATATGACCTCTGTGAAACAGC 885  
Db 841 gtgcagcgccacatctgagcactgctaacctcaccttcgagcagcttcgtatgcttgtaa 900  
OY 886 GTGCAGCGGCACATGGACATGCTAACCTCACCTTCGAGACCTTCGTAGCTGTATGAA 945  
Db 901 agcttacccgggaagaagatgtagcagaagacatctgaaaaaacaataagcgatgcaaa 960  
OY 946 AGCTTACCGGGAAGAAAGTGGAGCAGAAACATTTGAAAAAACAATTAAGCATGCAAA 1005  
Db 961 cccagtgacacagatccctgaagctgctcagttgtgtgcgaataaataatgtagcaccagac 1020  
OY 1006 CCCAGTGACCAAGATCCTGAGCTGCTCAGTTGTGGCGAATTAATAATGGGACCAAGAC 1065  
Db 1021 accctggaagggcctatctgacgacataaagacataaagaagctaccacttcccaaac 1080  
OY 1066 ACCTTGAAGGGCCTATGACACCCACTTAAGCCTCAAGACCTACACTTCCCAAACT 1125  
Db 1081 gtactcagagatctaaagaacacatcaggttccttcacagcttcacaaatgtacaaatg 1140  
OY 1126 GTCACTCAGAGTCTAAAGAAAGACATCAGTTCCTTCACAGCTTACAAATGTACAAATG 1185  
Db 1141 taccgaagttattttttagaataatgataagtaaacaggtccaatcagtaataaataagctgc 1200  
OY 1186 TATCAGAGTTATTTTGTGAATATGATAGTAAACAGTCAATCAGTAAATAATAGCTGC 1245  
Db 1201 ttataa 1206  
OY 1246 TTATTA 1251  
|||||  
RESULT 5  
ID T33161 standard; DNA: 1206 BP.  
AC T33161:  
DT 22-APR-1997 (first entry)  
KW Mutated OCIF, OCIF-C195, coding sequence.  
KW Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption;  
KW Osteoporosis; ss.  
OS Synthetic.  
FH Key Location/Qualifiers  
FT sig\_peptide 1..63  
FT mat\_peptide 64..1203  
FT /\*tag- b  
FT /product- OCIF-C195  
PN MO9626217-A1.  
PD 29-AUG-1996.  
PE 20-FEB-1996: J00374.  
PR 20-FEB-1995: JP-054977.  
PR 21-JUL-1995: JP-207508.  
PA (SNOW) SNOW BRAND MILK PROD CO LTD.  
PI Goto M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T;  
PI Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H;  
PI WPI: 96-402320/40.  
DR P-PSDB: P99931.  
PT DNA encoding osteoclastogenesis inhibitory factor protein - useful  
PT for bone resorption control, esp. treatment of osteoporosis  
PS Claim 27: Page 132; 183pp; Japanese.  
CC This sequence encodes a mutated version of the full length  
CC osteoclastogenesis inhibitory factor (OCIF) of the invention. This  
CC sequence encodes OCIF-C195 in which the 19th Cys residue in the mature  
CC OCIF protein is substituted by Ser. The OCIF of the invention has a  
CC molecular weight by SDS-PAGE of 60 kD under reducing conditions and  
CC 120 kD under non-reducing conditions. The protein is adsorbed onto  
CC cation-exchangers or heparin and its activity is lowered after 10 mins  
CC at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90  
CC deg.C. OCIF is useful in the control of bone resorption and therefore  
CC in the treatment and prevention of disorders of bone resorption, e.g.

CC osteoporosis.  
SQ Sequence 1206 BP; 389 A; 283 C; 270 G; 264 T;  
Query Match 78.6%; Score 1200; DB 27; Length 1206;  
Best Local Similarity 99.8%; Pred. No. 0.00e+00;  
Matches 1203; Conservative 0; Mismatches 3; Indels 0; Gaps 0;  
Db 1 atgaacaactgtctgtgtcgtcgcgctgtgttcttcgtgacatctccatlaagtgaccac 60  
OY 46 ATGAACAAGTGTGCTGTCTGCTCGCCCTGTGTTCTTGACACTCTCCATTAGGTGACCC 105  
Db 61 caggaaacggttctctccaagaagtacctcatatgacgaagaacaccttcacgtcttg 120  
OY 106 CAGGAACGTTTCTCTCCAAAGTACTCTTATGACGAAGAAACCTCTCAACGCTTG 165  
Db 121 tgtgcaaaatgtccctctctgtgtaccttaacctaacaacactgtacaagaagtgtgaagac 180  
OY 166 TGTGCAAAATGTCTCTCTGTGACTACTTAACCAACACTGTACAGCAAGTGAAGACC 225  
Db 181 gtgtgagcccttgcccttgaccactactacaagacagctgtgcaaccagtgacagtg 240  
OY 226 GTGTGCCCCCTTGCCCTGACACTACTACACAGACGCTGGCACACACTGACGAGTGT 285  
Db 241 ctatactgacgccccgtgtgcaagagctcagtagtcaagaggtgcaatctgcagc 300  
OY 286 CTATACTGCAACCCCGTGTGCMAGAGCTCGAGTCAAGCGAGGTCAATCGCAC 345  
Db 301 cacaacccgctgtgtcgaaatgcaagaagggcgctacccttgatagatagatctctgtaa 360  
OY 346 CACAACCGCGTGTGCGAATGCAAGAGAGGGCGTACTTGAGATAGAGTCTCTGTTGAA 405  
Db 361 catagagctgcccctctctgtgatttgagtggtgcaagctggaaccccaagcgaaatata 420  
OY 406 CATAGGAGCTGCCCCCTCGATTGCGATGTGTCGAMGCTGGAACCCGACGACGAATATA 465  
Db 421 gttgcaaaagatgtccagaatgggtcttctcaatgagacgcatctaagacacctgt 480  
OY 466 GTTGCAAAAGATGTCCAGATGGGTTCTTCTCAATGAGCGTCAATTAAGCCCTGT 525  
Db 481 agaaacaacacaatctgcaatgcttctgtctcctgttaactcagaagaagaatgcaaca 540  
OY 526 AGAAACACACAAATTCAGAGTCTTGTGCTCTCTGCTACTCGAAGAGAAATGCACAA 585  
Db 541 caagcaacacatattgtccggaagaacagtgaatcaactcaaaaaagtgtgaatagatgtacc 600  
OY 586 CACGACCAACATATGTCTCGGAACAGTGAATCAACCTCAAAATGTGGAATATGATGTACC 645  
Db 601 ctgtgtgagagagcattcttcaaggttgcgtgtctcctcaagaagtttaagcttaactgtct 660  
OY 646 CTGTGTAGAGAGGCAATTTCTCAGGTTGTGCTCTCAAAAGTTTACGCTTAACGTGCTT 705  
Db 661 agtctctgtgagacaattgcctgtgcacccaagaagttaagcgagagtgtagagagata 720  
OY 706 AGTCTCTTGTGAGCAATTTGCTCGGCACCAAGTAACCAAGAGATGTAGAGAGGATA 765  
Db 721 aaacggaacacagctcacagaacagacatttccagctgtcgtgaagtatagyaaacatcaa 780  
OY 766 AAACGGCAACACACTCACAAGAACAGACACTTCCAGCTGCTGAAGTTATGGAACATCAA 825  
Db 781 aacaaagaacaaagatatagtcagaagaatcatccaagatatattgacctctgtgaacaagc 840  
OY 826 AACAAAGACCAAGATATAGTCAGAAAGATCATCCAAAGATATGACCTCTGTGAAACAGC 885  
Db 841 gtgcagcgccacatctgagcactgctaacctcaccttcgagcagcttcgtatgcttgtaa 900  
OY 886 GTGCAGCGGCACATGGACATGCTAACCTCACCTTCGAGACCTTCGTAGCTGTATGAA 945  
Db 901 agcttacccgggaagaagatgtagcagaagacatctgaaaaaacaataaagcgatgcaaa 960  
OY 946 AGCTTACCGGGAAGAAAGTGGAGCAGAAACATTTGAAAAAACAATTAAGCATGCAAA 1005  
Db 961 cccagtgacacagatccctgaagctgtctcagttgtgtgcgaataaataatgtagcaccagac 1020  
|||||

DB	Query Match	Best Local Similarity	Matches 1202; Conservative	Score 1198; DB 27; Length 1206; Pred. No. 0.00e+00; Mismatches 4; Indels 0; Gaps 0;
DB	1 atgaacaactgctgtgtgctgctgtgtgtttctgtgacatctcattagtgcacc 60			
QY	46 ATGAACAAGTTCTGTGTGCGCGCTCTGTGTTCTGGACATCTCCATTAAATGAGCACC 105			
DB	61 caggaaacgttctccccaagaatcattatgacgaagaacacctcatcagctgtg 120			
QY	106 CAGGAAGCTTCCCTCCAAAGTACTTATATATGACGAAGAAACCTCTCATCAGCTTTG 165			
DB	121 gttgcaaatgtctctctgtgtactcctaactaaacaacactgtacagaaagtgtgaagc 180			

OY	166	TGTAACAATATGTCCTCTCTGGTACCTACTTAAAAACAACACTGTACAGCAAAATGTGAAGAC	225
Dp	181	gtgcgcgcctcttgccctctgaccctactacacagagacgttgccacaccacttgacagtg	240
OY	226	GTGTGCGCCCTTGCTGCTGTACCACTACTACAGACAGCTGGCACACAGTACAGATGT	285
Dp	241	ctatactgcagccccgtgtgcagagagctgcagtagcgtcaagcagagtgcatctgcacc	300
OY	286	CTATACTGACAGCCCCGTTGCAGAGAGCTGACGTACTAGCTCAACACAGAGATGCACAC	345
Dp	301	cacaaacgcggtgtgcggaatgcaagagaagggcgctacctggaaatgagttgcgttgaa	360
OY	346	CACAAACCGCGTGTGCGAATCAAGAAAGGCGCTACTTGAATAGAGTTCGCTTGAAA	405
Dp	361	catagagagctgcacctcttgattctggatgtgtgtgcaagctgcgaagcccaagtgaaata	420
OY	406	CATAGGAGCTGTCCCTCTGTGATTTGGATGTGTCAAGCTTGGAAACCCAGAGGGAATACA	465
Dp	421	gtttgcacaaagtgcacgaatgggtgtctcttcctcaatgtagcgtcactaaagcaccgt	480
OY	466	GTTTGCAAAAGATGTCCAGATGGGTTCTTCTCAATAGAGACGTCTAAAGACCTGT	525
Dp	481	agaaacacacacaatgtgcagtgtccttgctgtctcgtcctaacccagaaggaatgcaca	540
OY	526	AGAAAACACCAATGTGCATGTCTTGTGTCTCTCTCACTCAAAAGAAATGCAACA	585
Dp	541	cacgacacacatagtctccggaacacgttgatcatcaactcaacaaatgtggaatagattacc	600
OY	586	CACGACAACTATGTTCGGAACCAATGATCATCACTCAAAATGTGGAATAGATTTTACC	645
Dp	601	ctgtgtgaggagagcatctcctcaggttctgtctgtcctacaaagtctacgcctaactgtgt	660
OY	646	CTGTGTAGAGGAGCATCTTCAAGTGTGTGTGTCTCTCAAAATTTACGGCTTAATGCGCTT	705
Dp	661	agttctcttggttagacaattcttgctctgcgcaccaaagtaaacgcgagagtgtagagagata	720
OY	706	AGTGTCTTGTGTAGCAATTTGCTCTGGCACCAAGTAAAGCGAAGATGTATGAGAGGATA	765
Dp	721	aaagggacacacagctccacagaacagactcttcacagctgcgaagttagtgaacataca	780
OY	766	AAACGGCAACACACTTCACAAAGACACTTTCACAGCTCTTAATTTATGAAACATATA	825
Dp	781	aacaaagacccaagatatagtacgaagaagatcatccaaagatattgacctcagtgaacacagc	840
OY	826	AACAAACACCAAGTATAGTACGAAGATCATCAAGATATATGACTCTGTGAAACACGC	885
Dp	841	gtgcagcggcgacatttggacatgtctaacctccacctccagagccttcgttagcttgatgaa	900
OY	886	GTCAGAGCGGCACATTGGACATGTCTAACCTCCACTTCGACACACTTCGTATGTATGAA	945
Dp	901	agcttaccggggaagaaagtgagggaagagaagacatttgaaaaaacaataaagcattgcaca	960
OY	946	AGCTTACCGGGAAAGAAATGGGAGCAGAAAGACATTGAAAAAAACATTAAGCATATGCAAA	1005
Dp	961	ccccagtgaccagatctctgaagctgtctcagtttgttgcgataaaaaatfvgcgaccagac	1020
OY	1006	CCCAAGTACACAGATTCGTGAAGCTGCTCACTTGTGGCGAATAAAAAATGGCGACCAACAC	1065
Dp	1021	acccttgaagggcctaatagtcagcgacctaagaagcactcaaaagcttacccacttcccaaac	1080
OY	1066	ACCTTGAAGGGCTTAATGACACGCACCTTAAGCACTCAAAAGCCTTACACTTTCCTCAAACT	1125
Dp	1081	gtcactaagagtttaagaagagacactcaagttccttcacaccttacaatgtacaaatgtg	1140
OY	1126	GTCACTAGAGTCTAAAGAGACCACTAGGTTCTTCAACAGTTTCAATGTACAAATGTG	1185
Dp	1141	tatcaagaagtattctttagaagaatgcataggttaaccaggtccaatctcagtaaaaaatagctgc	1200
OY	1186	TATACGAAGTATTTTATGAAGAATAGATGTAAACAGCTCCAACTCACTAAAAAATTAAGCTCC	1245
Dp	1201	ttataa 1206	
OY	1246	TTATATA 1251	





PI Goto M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T;  
PI Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H;  
DR WPI: 96-402320/40.  
DR P-PSDB: R99948.  
PI DNA encoding osteoclastogenesis inhibitory factor protein - useful  
PT for bone resorption control, esp. treatment of osteoporosis  
PS Claim 78, Page 148, 183pp, Japanese.  
CC This sequence encodes a mutated version of the full length  
CC osteoclastogenesis inhibitory factor (OCIF) of the invention. This  
CC sequence encodes OCIF-Cbt in which gln371 is substituted with Leu  
CC and amino acids 373-380 of the mature protein have been deleted. These  
CC amino acid changes have been caused by the introduction of a restriction  
CC site. The OCIF of the invention has a molecular weight by SDS-PAGE of  
CC 60 kD under reducing conditions and 120 kD under non-reducing  
CC conditions. The protein is adsorbed onto cation-exchangers or heparin  
CC and its activity is lowered after 10 mins at 70 deg.C or 30 mins at 56  
CC deg.C, and is lost after 10 mins at 90 deg.C. OCIF is useful in the  
CC control of bone resorption and therefore in the treatment and  
CC prevention of disorders of bone resorption, e.g. osteoporosis.  
Sequence 1182 BP; 376 A; 280 C; 266 G; 260 T;

Query Match 76.8%; Score 1173; DB 27; Length 1182;  
Best Local Similarity 99.7%; Pred. No. 0.00e+00;  
Matches 1176; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

DB 1 atgaacaactctgtgtcgtcggtcgtgtgttcctggaaattccattatgagaccac 60  
QY 46 ATGAACAAATTCTGTGCGCGCGCGCGTGTCTGGAACTCCATTAAAGGACACAC 105  
DB 61 caggaaagcttcctcccaagtaacctctatagcagaagaacctcatagctgttg 120  
QY 106 CAGGAAGCTTCTCCCTCCAAAGTACCTCTATTAGACGAAGAACTCTATACCTGTG 165  
DB 121 tgtgacaatctgtcctctcgtgtactactctaaacaacactgtacagaaagtgaagacc 180  
QY 166 TGTGAACAAATGTCCTCTGTAACCTAAACAACACTGTACAGCAAGTGAAGAAC 225  
DB 181 ggtgtcgccctcgtccctgagcaactactacacagacagctgtgcaacagtgagagtt 240  
QY 226 GTGTGCGCCCTGTGCTCCACCACTACAGACAGCTGACACCCGTACAGAGTGT 285  
DB 241 ctatctcgtgagcccgctgtgcaagagagctgcagtgactgaagcagaagtgacagcc 300  
QY 286 CTATACTGAGCCCTGTGCAAGAGCTGCACTAGCTAGAGAGAGTGCATATGCAACC 345  
DB 301 cacaacccgctgtgcaatgcaaggaagggcctacctgagatagagttcgtctgaaa 360  
QY 346 CACAACCCGCTGTGGGAATGCAAGAGGGCGCTACCTGAGATAGAGTTCTGCTTAAA 405  
DB 361 catagagagctgctccctcctcgtgattggaagtgtgcagagctggaacccagagcgaataca 420  
QY 406 CATAGAGAGCTGCTCTCTGATTTGGAGTGGCAAGCTGGGAACCCCAAGCAATATA 465  
DB 421 gtttcaaaaagatgttcagatggttctctcaaatgagagctcatctaaagcaacctgt 480  
QY 466 GTTTGCAAAAGATGTCACATGATGTTCTTCTCAATGAACTCATTTAAACACCCCTGT 525  
DB 481 agaaaaacacacaatgtcagtgcttctgtgtcctcgtactcagaagaatgcaaca 540  
QY 526 AGAAAAACACAATTTGCAATGCTTTGCTTCCTGCTACACTGAGAAAGAAATGCAACA 585  
DB 541 cacgacacacatgttcgggaaacagtgaaactcaactcaaaaatgtggaatagatgtttacc 600  
QY 586 CACGACACACATGTTCCTCCGAAACAGTGAATACACCAAAAATGTGGAATGATGTATAC 645  
DB 601 cgtgtgaggaagagcattctcaggttctgttctcctacaagaattacgcttaacggctt 660  
QY 646 CTGTGTGAGGAGGACATTCTTCAGGTTTGTCTTCTTCAAAAGTTTACGCTTACCTG 705  
DB 661 agtgtcttgtagacaattgtcctggcacaagaagtaaacgagagagtgtagagagata 720  
QY 706 AGTGTCTTGTAACAATTTGGCTGTGCACCAAGTAAGCGAGAGGTATAGAGAGATA 765

DB 721 aaagggacaacagctctacaagaagaacagacttccagctcgtcgaagtatggaacatcaa 780  
QY 766 AAAGGACACACAGCTCACAGAAACAGACTTTCCAGCTGTGGAAGTTATGAAACATCAA 825  
DB 781 aacaagaagcagaatagatcaagaagaatcacaagaatatgaccctgtgaaacagc 840  
QY 826 AACAAAGCAAGATATAGTCAAGAAACATCATCAAGATATGACCTCTGTGAAACAGC 885  
DB 841 gtgacggcagcatttgacacatgctaacctcacccttcgagcagcttcgtatgtgaa 900  
QY 886 GTGACGCGGCATTTGACATGATCACTCACTTCCTTCAGACAGCTTCTGACTTATGAA 945  
DB 901 agcttaccgggaagaagatgtggagcagaagacttgaaaaaaataaagagctgtgaaa 960  
QY 946 AGCTTACCGGGAGAAAGTGGAGAGAAACATTTAAAAAACAATAAGGCATGCAAA 1005  
DB 961 cccagtgaccagatccctgaaagctgtcagttgtggcgaataaataatggcagacagac 1020  
QY 1006 CCCAGTGACAGATCCCTGAAGCTCTCAGTTTGTGGCAATAAAAATGGCGACCAAGAC 1065  
DB 1021 accttgaagggcctaatacgcacacactaaagcactcaagaagcgtacacttcccaaac 1080  
QY 1066 ACCTTGAAGGGCCTTAATGACAGCAGCTAAAGCACTCAAGAGCTACCTTCCAAAAC 1125  
DB 1081 gtcaactcagagctcctaagaagacacatcagttcctctacagcttcaacaatgtacaattg 1140  
QY 1126 GTCACTCAGACTCTTAAAGAAACATCAGGTTCCCTTCACAGCTTCACAAATGTACAAATTG 1185  
DB 1141 taccagaagtattctttagaatatagtaaccatgac 1179  
QY 1186 TATCAGAAGTTATTTTGAAGATATAGTATACCAAGTGC 1224

RESULT 9  
ID T33173 standard; DNA: 1056 BP.  
ID T33173;  
DT 22-Apr-1997 (first entry)  
DE Mutated OCIF, OCIF-CC, coding sequence.  
KW Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption;  
OS Synthetic.  
FH Key Location/Qualifiers  
FT sig\_peptide 1..63  
FT /\*tag- a 64..1053  
FT mat\_peptide  
FT /\*tag- b  
FT /product- OCIF-CC  
FN W09626217-A1.  
PN 29-Aug-1996.  
PF 20-FEB-1996; J00374.  
PR 20-FEB-1995; JP-054977.  
PR 21-JUL-1995; JP-207508.  
PA (SNOW ) SNOW BRAND MILK PROD CO LTD.  
PI Goto M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T;  
PI Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H;  
DR WPI: 96-402320/40.  
DR P-PSDB: R99943.  
PT DNA encoding osteoclastogenesis inhibitory factor protein - useful  
PT for bone resorption control, esp. treatment of osteoporosis  
PS Claim 63, Page 144-145, 183pp, Japanese.  
CC This sequence encodes a mutated version of the full length  
CC osteoclastogenesis inhibitory factor (OCIF) of the invention. This  
CC sequence encodes OCIF-CC in which amino acids 331-380 of the mature  
CC protein have been deleted. The OCIF of the invention has a molecular  
CC weight by SDS-PAGE of 60 kD under reducing conditions and 120 kD under  
CC non-reducing conditions. The protein is adsorbed onto cation-exchangers  
CC or heparin and its activity is lowered after 10 mins at 70 deg.C or 30  
CC mins at 56 deg.C, and is lost after 10 mins at 90 deg.C. OCIF is useful  
CC in the control of bone resorption and therefore in the treatment and  
CC prevention of disorders of bone resorption, e.g. osteoporosis.  
SQ Sequence 1056 BP; 332 A; 252 C; 247 G; 225 T;

Query Match 68.9%; Score 1052; DB 27; Length 1056;







Dh 901 agcttaccggggaagaagtggagcagaagacattgtaaaaaacataaagcc 953  
 |||||||  
 Qy 946 AGCTTACCGGGAAGAAAGTGGAGCAGAGACATTTGAAAAACATAAAGGC 998

RESULT 12  
 ID T33167 standard: DNA: 1080 BP.  
 AC T33167;  
 DT 22-APR-1997 (first entry)  
 DT Mutated OCIF, OCIF-PCR2, coding sequence.  
 KW Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption;  
 KW osteoporosis; ss.  
 FH Synthetic.  
 FS Key Location/Qualifiers  
 FT sig\_peptide 1..63  
 FT /\*tag- a  
 FT mat\_peptide 64..1077  
 FT /\*tag- b

/product- OCIF-PCR2  
 WO9626217-A1.  
 PD 29-AUG-1996.  
 PF 20-FEB-1996; J00374.  
 PR 20-FEB-1995; JP-054977.  
 PR 21-JUL-1995; JP-207508.  
 PA (SNOW ) SNOW BRAND MILK PROD CO LTD.  
 PI Goto M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T;  
 PI Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H;  
 PI WPI: 96-402320/40.  
 PR P-PSDB: R99937.  
 PT DNA encoding osteoclastogenesis inhibitory factor protein - useful  
 PT for bone resorption control, esp. treatment of osteoporosis  
 PS Claim 45: Page 138-139; 183pp; Japanese.  
 PS This sequence encodes a mutated version of the full length  
 CC osteoclastogenesis inhibitory factor (OCIF) of the invention. This  
 CC sequence encodes OCIF-PCR2 in which amino acids 43-84 of the mature  
 CC protein have been deleted. The OCIF of the invention has a molecular  
 CC weight by SDS-PAGE of 60 kD under reducing conditions and 120 kD under  
 CC non-reducing conditions. The protein is adsorbed onto cation-exchangers  
 CC or heparin and its activity is lowered after 10 mins at 70 deg.C or 30  
 CC mins at 56 deg.C, and is lost after 10 mins at 90 deg.C. OCIF is useful  
 CC in the control of bone resorption and therefore in the treatment and  
 CC prevention of disorders of bone resorption, e.g. osteoporosis.  
 CC Sequence 1080 BP; 357 A; 243 C; 236 G; 244 T;

Query Match 58.3%; Score 890; DB 27; Length 1080;  
 Best Local Similarity 99.9%; Pred. No. 0.00e+00;  
 atches 891; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

Dh 189 cgaatgcagaagaaggcgctacattgagatagatgtctgcttgaacaatagagctgcc 248  
 |||||||  
 Qy 360 CGAATGCAGAGGAGGCCCTACTGAGATAGATGTTGCTTGAACAATAGAGCTGCC 419  
 Dh 249 tccctgatttggagagtgagcgaagcgggaaccccaagcgaataaagtttggaaaagtg 308  
 |||||||  
 Qy 420 TCCCTGATTGGAGTGGTGCAGAGCTGGAAACCCAGAGCAAAATACAGTTTGAAGAAAGATG 479  
 Dh 309 tcccaatgagttctctcaaatgagacgtcatctaaagcaccctgtagaacacacacaa 368  
 |||||||  
 Qy 480 TCCCAATGGGTTCTTCTCAATGACACGTCATCTAAGACCCCTGTAGAAACACACAAA 539  
 Dh 369 ttgcagtgcttctgtctcctcgtctactcaagaagaagaaatgcacacacagacacatatg 428  
 |||||||  
 Qy 540 TTGCAGTGTCTTGTCTCTCTCTACTACAGAAAGAAATGCACACACGACACATATG 599  
 Dh 429 ttccggaacacatgataactcaaaaatgtgtaagtagtgaacctgtgtggaagagc 488  
 |||||||  
 Qy 600 TTCCGGAACACATGATACATCAAAAGTGAATGATGTATCCCTGTGTGAGAGGCG 659  
 Dh 489 attcttcaggttctgtctcctacacaaagttaagcctaactggtctagtgtctgtaga 548  
 |||||||  
 Qy 660 ATTCTTACAGTTTGTGCTTCTCTACAAAGTTTACGCTACTGCTAGTGTGTGTGAGA 719

Dh 549 caattgctctggcaccacaagttaaacgcagagagtgtagagagataaaacgycacacag 608  
 |||||||  
 Qy 720 CAATTGCTCTGGCACCACAAAGTAAACGAGAGAGTGTAGAGAGGATTAAGGCGCACACAG 779  
 Dh 609 ctccacaagaacagacttccagctcgtgaagttatggaacatcaaaaacaaagaacaga 668  
 |||||||  
 Qy 780 CTCACAGAAGACAGACTTCCAGCTGCTGAGGTATGGAACATCAAAACAAAGACACAGA 839  
 Dh 669 tatatgaagaagaatccatccaagatatgacctctgtgaaaacagcgtgcagggcacat 728  
 |||||||  
 Qy 840 TATATGACAGAGAGATCAATCCAAAGATATGACCTCTGTGAAAACGCGTGCAGCGACAT 899  
 Dh 729 tggacatgttaacctcaacctcgcagcagcttcgtagcttgaatgtggaagagttaccgggaaa 788  
 |||||||  
 Qy 900 TGGACATGCTTAACCTTCACTTGCAGAGCTTGTGAGCTTGTGAGAAAGCTTACCGGGAAA 959  
 Dh 789 gaaagtggagcagaagaacattgtaaaaaacataaagcagatgcacacagtgaccagat 848  
 |||||||  
 Qy 960 GAAAGTGGAGCAGACAGACATGAAAAACATTAAGCATAGCAACCCAGTGCAGAT 1019  
 Dh 849 cctgaagctgctcagttgttgcgaataaaaaatgycgaccagaacacacttgaagggcct 908  
 |||||||  
 Qy 1020 CCTGAGCTGCTCAGTTGTGCGAATAAAAATGCGACCAACACACTTGAAGGCGCT 1079  
 Dh 909 aatgcagcactaaagcactcaagaagcagctccacttcccaaaactgtcagagctc 968  
 |||||||  
 Qy 1080 AATCCAGCAGCTAAAGCAGCTCAAGAGCTACCACTTCCAAAACCTTCACTCGAGACT 1139  
 Dh 969 aaagaagacacatcaggttctctcagcagcttcacaaatgtacaaatgtatcacaagttat 1028  
 |||||||  
 Qy 1140 AAAAAGACCATCAGTTCCTCTCAGCTTCAACATGTACAAATGTGATCAGAAATATT 1199  
 Dh 1029 tttagaatgtaagtaaccaggttccaatcagtaaaaaaataagctgtctataa 1080  
 |||||||  
 Qy 1200 TTTAGAATGATAGTATGATCAACGAGTCAATCAATGATAAATAGCTGCTTATA 1251

RESULT 13  
 ID T33171 standard: DNA: 984 BP.  
 AC T33171;  
 DT 22-APR-1997 (first entry)  
 DT Mutated OCIF, OCIF-DDD2, coding sequence.  
 KW Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption;  
 KW osteoporosis; ss.  
 FH Synthetic.  
 FS Key Location/Qualifiers  
 FT sig\_peptide 1..63  
 FT /\*tag- a  
 FT mat\_peptide 64..981  
 FT /\*tag- b  
 FT /product- OCIF-DDD2  
 PN WO9626217-A1.  
 PD 29-AUG-1996.  
 PF 20-FEB-1996; J00374.  
 PR 20-FEB-1995; JP-054977.  
 PR 21-JUL-1995; JP-207508.  
 PA (SNOW ) SNOW BRAND MILK PROD CO LTD.  
 PI Goto M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T;  
 PI Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H;  
 PI WPI: 96-402320/40.  
 PR P-PSDB: R99941.  
 PT DNA encoding osteoclastogenesis inhibitory factor protein - useful  
 PT for bone resorption control, esp. treatment of osteoporosis  
 PS Claim 57: Page 142-143; 183pp; Japanese.  
 PS This sequence encodes a mutated version of the full length  
 CC osteoclastogenesis inhibitory factor (OCIF) of the invention. This  
 CC sequence encodes OCIF-DDD2 in which amino acids 253-326 of the mature  
 CC protein have been deleted. The OCIF of the invention has a molecular  
 CC weight by SDS-PAGE of 60 kD under reducing conditions and 120 kD under  
 CC non-reducing conditions. The protein is adsorbed onto cation-exchangers  
 CC or heparin and its activity is lowered after 10 mins at 70 deg.C or 30  
 CC mins at 56 deg.C, and is lost after 10 mins at 90 deg.C. OCIF is useful  
 CC in the control of bone resorption and therefore in the treatment and



Db 601 ctgtgtgaggaagcattcttcagggttctgtcttctacaaagttaacgccttaactgctt 660  
 |||||  
 QY 646 CTGTGTGAGGAGCGATTCTTTCAGTGTCTGTCTCTACAAAGTTTACGCTTAAGCTTGGCTT 705  
 Db 661 agtctctgtgtagacaatttgccttgcaccaaagtaaacgcagagagtgtagaagagata 720  
 |||||  
 QY 706 AGTGTCTGTGAGACAAATTTGGCTGTGCACCAAGTAACGGCAGAGTGTAGAGAGATA 765  
 Db 721 aaagcgcaacacagctcccaagaagaagcttccagctgtcgtgaagtattggaacataca 780  
 |||||  
 QY 766 AACCGCACACAGCTCTCAGAACAGACATTCTCCAGCTGTGAAGTATGGAACATCAA 825  
 Db 781 aacaaagaccagatatagatcaagaagatcatccaa 816  
 |||||  
 QY 826 AACAAAGACCAAGATATAGTCAAGAGATCATCCAA 861  
 TUL 15  
 T33168 standard: DNA: 1080 BP.  
 DT 22-APR-1997 (first entry)  
 DE Mutated OCIF, OCIF-DCR3, coding sequence.  
 KW Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption;  
 KM osteoporosis; ss.  
 OS Synthetic.  
 FH Key Location/Qualifiers  
 FT sig\_peptide 1..63  
 FT /tag- a  
 FT mat\_peptide 64..1077  
 FT /\*tag- b  
 PN /product- OCIF-DCR3  
 PN K09626217-A1.  
 PD 29-AUG-1996.  
 PE 20-FEB-1995; JP-054977.  
 PR 20-FEB-1995; JP-054977.  
 PR 21-JUL-1995; JP-207508.  
 PA (SNOW) SNOW BRAND MILK PROD CO LTD.  
 PI Goto M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T;  
 PI Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H;  
 PI WPI: 96-402320/40.  
 DR P-PSDB: R99938.  
 PT DNA encoding osteoclastogenesis inhibitory factor protein - useful  
 PT for bone resorption control, esp. treatment of osteoporosis  
 PS Claim 48: Page 139-140; 183pp; Japanese.  
 CC This sequence encodes a mutated version of the full length  
 CC osteoclastogenesis inhibitory factor (OCIF) of the invention. This  
 CC sequence encodes OCIF-DCR3 in which amino acids 85-122 of the mature  
 CC protein have been deleted. The OCIF of the invention has a molecular  
 CC weight by SDS-PAGE of 60 kD under reducing conditions and 120 kD under  
 CC non-reducing conditions. The protein is adsorbed onto cation-exchangers  
 CC or heparin and its activity is lowered after 10 mins at 70 deg.C or 30  
 CC mins at 56 deg.C, and is lost after 10 mins at 90 deg.C. OCIF is useful  
 CC in the control of bone resorption and therefore in the treatment and  
 CC prevention of disorders of bone resorption, e.g. osteoporosis.  
 SQ Sequence 1080 BP; 351 A; 259 C; 233 G; 237 T;

Query Match 50.1%; Score 765; DB 27; Length 1080;  
 Best Local Similarity 100.0%; Pred. No. 0.00e+00;  
 Matches 765; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Db 496 gaagcattcttcaagtttgcgtgttccctacaaagtttaacgccttaactgcttagtctgt 555  
 |||||  
 QY 655 GAGCATTCTTTCAGGTTTGGCTGTCTCTACAAAGTTTACGCTTAAGCTTGGCTT 714  
 Db 556 gtagacaatttgccttgcaccaaagtaaacgcagagagtgtagaagataaacaagca 615  
 |||||  
 QY 715 GTACACAAATTTGCTGTGCACCAAGTAACGCAGAGAGTGTAGAGAGATAACGGCAA 774  
 Db 616 cacagctcacaagaagacagcttccagctgtcgaagttatgaaacatacaaaacaaag 675  
 |||||  
 QY 775 CACAGCTCACAGAACAGACTTCCAGCTCTGAAGTATGAAACATCAAAACAAAGAC 834  
 Db 676 caagatagatcaagaagatcatcccaagaatattgacctctgtgtaaaacagcgcgcg 735  
 |||||  
 QY 835 CACATATGATCAAGAAAGATCATCCAAAGATATTGACCTCTGTGAACACAGCTGACGG 894  
 Db 736 cacatlgacatgttaaccctcaccttcagcagcttcgttagctgtatgaaagcttaccg 795  
 |||||  
 QY 895 CACATTGACATGCTACCTCACCTTGACCTTGACCTTGATGAAAGCTTACCG 954  
 Db 796 ggaagaagaagtggagcagaagacattgaaaaaacaataaggcatgcaaacccagtgac 855  
 |||||  
 QY 955 GGAAGAAGAAGTGGAGCGAGACATGAAAAAACAATAAAGCATGCAAAACCCAGTGAC 1014  
 Db 856 cagatcctggaagctgctcagcttctgtgtggaataaaatgagcacaagcacttgaag 915  
 |||||  
 QY 1015 CAGATCTGAAAGCTGCTCAATTTGTGGCAATTAATAAATGGCCAAAGCACCTTGAAAG 1074  
 Db 916 ggcctaatgacgagactaaagcaactcaaaagcgtacacttcccaaaactgtcactcag 975  
 |||||  
 QY 1075 GGCTATATGACGACGACATAAGCACTCAAAAGCTACACTTTCCAAAATGTGACTCAG 1134  
 Db 976 agcttaagaagacacacaggttctcttcaagcttcaaatgtacaaatgtatcagaag 1035  
 |||||  
 QY 1135 AGCTTAAGAAGACCAATCAGGTCTCTCACAGCTTCACATGTACAAATGTATCAGAAG 1194  
 Db 1036 ttatttttaaatgtagttaaaccaggttccaatcagtaaaata 1080  
 |||||  
 QY 1195 TTATTTTGAATGATGATGATACCAAGTCCAAATCAGTAAATA 1239

Search completed: Thu Aug 21 10:07:25 1997  
 Job time : 360 secs.